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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: IDENTIFICATION AND VALIDATION OF NOVEL TARGETS FOR AGROCHEMICALS

(57) **Abstract:** The invention relates to a method for identifying and validating plant targets for agrochemicals, comprising the steps of determining gene or protein expression profiles in function of the progression of an essential biological process in a plant, and the subsequent downregulation of expression of said gene or protein in a plant cell. More particularly, the effects of downregulation of the candidate target gene were directly monitored on plants locally infected with a vector mediating viral induced gene suppression in that infected plant area. The invention also relates to isolated plant genes encoding proteins involved in plant growth and development. The invention also relates to plants tolerant to agrochemicals such as herbicides or pesticides.

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INTERNATIONAL SEARCH REPORT

International Application No

PC17EP 03/03703

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/82 G01N33/53

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N G01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS, WPI Data, MEDLINE, EMBL

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6 369 296 B1 (BAULCOMBE DAVID CHARLES ET AL) 9 April 2002 (2002-04-09) the whole document	1-8
Y	BREYNE PETER ET AL: "Genome-wide expression analysis of plant cell cycle modulated genes." CURRENT OPINION IN PLANT BIOLOGY, vol. 4, no. 2, April 2001 (2001-04), pages 136-142, XP002210256 ISSN: 1369-5266 cited in the application the whole document	1-8
A	WO 01 07601 A (KUMAGAI MONTO H ;DELLA CIOPPA GUY (US); LARGE SCALE BIOLOGY CORP () 1 February 2001 (2001-02-01) the whole document	1-8
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

18 August 2003

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP 03/03703

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 01 94603 A (ROBERTSON DOMINIQUE ;TURNAGE MICHAEL A (US); UNIV NORTH CAROLINA () 13 December 2001 (2001-12-13) the whole document -----	1-8
A	WESLEY S VARSHA ET AL: "Construct design for efficient, effective and high-throughput gene silencing in plants" PLANT JOURNAL, BLACKWELL SCIENTIFIC PUBLICATIONS, OXFORD, GB, vol. 27, no. 6, September 2001 (2001-09), pages 581-590, XP002187670 ISSN: 0960-7412 the whole document -----	1-8

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP 03/03703

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

See Invention 1.

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

Invention 1: claims 1 to 8

a method for identifying and validating plant targets for agrochemicals

Inventions 2 to 786: claims 9 to 16 (all partially)

each invention comprises the use of one nucleic acid selected from the group of SEQ ID NO: 1-785 as a target for a herbicide or pesticide,
a method of screening candidate agrochemical compounds using said nucleic acid,
the use of said nucleic acid to produce agrochemical resistant plants,
the corresponding isolated nucleic acid

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 03/03703

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6369296	B1	09-04-2002	NONE
WO 0107601	A	01-02-2001	US 6303848 B1 16-10-2001
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